WHAT IS CLAIMED IS:

1. An isolated polynucleotide having the nucleotide sequence shown in SEQ ID NO: 1, 3 or 23.

2. An isolated polynucleotide encoding a native Frzb protein, said polynucleotide capable of hybridizing to a polynucleotide having the nucleotide sequence shown in SEQ ID NO: 1 at 55°C in 3 x SSC, 0.1% SDS.

3. An isolated Frzb protein encoded by the polynucleotide of Claim 2.

4. An isolated recombinant Frzb protein having the amino acid sequence shown in SEQ ID NO: 2, 4 or 7.

5. Isolated mammalian Frzb protein having a molecular weight of about 36 kilodaltons.

6. A pharmaceutical composition for inducing cartilage, bone, nerve or muscle growth comprising the isolated Frzb protein of Claim 3, or a Frzb protein having the amino acid sequence shown in SEQ ID NO: 2, 4 or 7, in a pharmaceutically acceptable carrier.

7. The composition of Claim 6, wherein said carrier comprises fibrin glue, freeze-dried cartilage grafts or collagen.

8. The composition of Claim 7, wherein said composition further comprises cartilage progenitor cells, chondroblasts or chondrocytes.

9. The composition of Claim 6, wherein said Frzb protein is coated onto or mixed with a resorbable or nonresorbable matrix.

10. The composition of Claim 6, wherein said Frzb protein is mixed with a biodegradable polymer.

11. A method of treating a cartilage, bone, nerve or muscle growth disorder in a mammal in need thereof, comprising the step of administering to said mammal an effective cartilage, bone, nerve or muscle-inducing amount of the pharmaceutical composition of Claim 6 at the site of said disorder.

12. The method of Claim 11, wherein said disorder is selected from the group consisting of subglottic stenosis, tracheomalacia, chondromalacia patellae, osteoarthritis, joint surface lesions, neurodegenerative disorders, myodegenerative disorders and osteodegenerative disorders.

13. The method of Claim 11, wherein said administering step is intravenous, intrathecal, intracranial, intramuscular or subcutaneous.

14. The method of Claim 11, wherein said mammal is a human.

15. A method of stimulating cartilage formation in a mammal, comprising the steps of:

combining the isolated Frzb protein of Claim 3, or a Frzb protein having the amino acid sequence shown in SEQ ID NO: 2, 4 or 7, with a matrix to produce a product that facilitates administration of said protein; and

implanting said product into the body of a mammal to stimulate cartilage formation at the site of implantation.

16. The method of Claim 15, wherein said matrix comprises a cellular material.

17. The method of Claim 15, wherein said combining step additionally comprises mixing of viable chondroblasts or chondrocytes.

18. The method of Claim 15, wherein said implanting is subcutaneous or intramuscular.

19. The method of Claim 15, wherein said mammal is a human.

20. A method of modulating Wnt-mediated signaling in a cell, comprising contacting said cell with an effective Wnt-modulating amount of the isolated Frzb protein of Claim 3, a Frzb protein having the amino acid sequence shown in SEQ ID NO: 2, 4 or 7, or a Wnt-modulating fragment thereof.

21. The method of Claim 20, wherein said cell is contacted *in vivo*.

22. The method of Claim 20, wherein said Wnt is selected from the group consisting of Wnt-8, Wnt-1, Wnt-2, Wnt-3, Wnt-4, Wnt-5A, Wnt-5B, Wnt-6, Wnt-7A and Wnt-7B.

23. A method of modulating Wnt-mediated signaling in a cell, comprising contacting said cell with a recombinant construct comprising the coding region of SEQ ID NO: 1, 3 or 23, or a region encoding an active Wnt-modulating fragment thereof, operably linked to a heterologous promoter in an expression vector.

24. The method of Claim 23, wherein said Wnt is selected from the group consisting of Wnt-8, Wnt-1, Wnt-2, Wnt-3, Wnt-4, Wnt-5A, Wnt-5B, Wnt-6, Wnt-7A and Wnt-7B.

25. A method of inhibiting the growth of a Wnt growth factor-expressing tumor in a mammal, comprising the step of contacting said tumor with an effective tumor growth-inhibiting amount of the isolated Frzb protein of Claim 3, or a Frzb protein having the amino acid sequence shown in SEQ ID NO: 2, 4 or 7.

26. The method of Claim 25, wherein said tumor is a mammary or intestinal tumor.

27. The method of Claim 25, wherein said mammal is a human.

28. A method of inhibiting the growth of a Wnt growth factor-expressing tumor in a mammal, comprising the step of contacting said tumor with a recombinant construct comprising the coding region of SEQ ID NO: 1, 3 or 23 operably linked to a heterologous promoter in an expression vector.

29. The method of Claim 28, wherein said construct is injected into said tumor.

30. The method of Claim 28, wherein said recombinant construct is systemically administered to said mammal.

31. The method of Claim 28, wherein said expression vector is a plasmid vector, retroviral vector or adenoviral vector.

32. Isolated antibodies to Frzb protein having the amino acid sequence shown in SEQ ID NO: 2, 4 or 7.

33. A method of facilitating tissue growth or repair, comprising the steps of:

isolating cells from said tissue;

introducing a recombinant construct expressing Frzb into said cells; and

returning said cells to said tissue.

34. The method of Claim 33, wherein said recombinant construct comprises a retroviral vector, adenoviral vector, herpesvirus vector or adeno-associated viral vector.

35. The method of Claim 33, wherein said tissue is selected from the group consisting of cartilage, muscle, bone and neural tissue.

36. A method of identifying a compound which affects Frzb activity, comprising:

contacting isolated Frzb with said compound; and

determining Frzb activity, wherein an increase in activity compared to Frzb alone indicates that said compound is a Frzb activator and a decrease in activity indicates that said compound is a Frzb inhibitor.

37. The method of Claim 36, wherein said determining step comprises an *in vivo* chondrogenesis assay.